CALIFORNIA STATE TEACHERS' RETIREMENT BOARD

INVESTMENT COMMITTEE

SUBJECT: Internal Equity Business Plan — ITEM NUMBER: 6

ATTACHMENT(S): 3

ACTION: X — DATE OF MEETING: May 5, 1999

INFORMATION: _____ — PRESENTER(S): Mr. Tong

Executive Summary

One of the 1998/99 objectives approved for the Investment Branch was to complete an annual business plan for the Internal Equities unit. This report includes the business plan with a comprehensive overview of the internally managed Standard & Poor's (S&P) 500 Indexed Portfolio. The responsibilities of the Internal Equities unit are to manage the S&P 500 Indexed Portfolio and the recently adopted cash equitization program. The overview of the S&P 500 Indexed Portfolio is divided into the following eight sections:

- Portfolio Role and Purpose
- Description and Definitions
- Historical Overview
- Current Status
- Performance Measurement
- Key Issues
- Implementation Objectives
- Staffing Issues

The management of the internal Indexed Portfolio began on April 1, 1998. The intent of the passive management program was to determine whether Staff could produce investment performance that was competitive with that of CalSTRS' external passive domestic equity manager and reduce overall tracking error within the S&P component of the passive mandate. The performance of this portfolio has been reported monthly in the Chief Investment Officer's report and has met expectations. In May 1999, Staff will begin managing the cash equitization program.

The objectives and guidelines for the Indexed Portfolio and cash equitization program are explicitly expressed in written policies and procedures. See "Attachment 2." The policies provide parameters that ensure prudence and care in the execution of the internal management programs, while allowing sufficient flexibility in the management process to manage risk and capture investment opportunities. The policies for the Indexed Portfolio have been revised to reflect a potential increase of assets under internal investment management. The policies are static in nature and cannot be changed without the approval of the Board.

Recommendations

1. Staff recommends an increase in the allocation to internal management for the S&P 500 passive mandate to 50 % of the aggregate. This increase will be funded by a series of transfers from the external S&P 500 Indexed Portfolio. To allow for a smooth transition, each transfer will occur periodically over time in order for Staff to manage and monitor the growth in the internal Indexed Portfolio. No single transfer will exceed $5 billion. All transfers will be completed in 6 months, beginning at the time of Board approval.

2. Staff recommends that the Board approve the revised policies for the internally managed S&P 500 Indexed Portfolio by adopting the attached resolution. See “Attachment 3.”

Pension Consulting Alliance has reviewed the proposals and concurs with Staff’s recommendations for approval.

California State Teachers' Retirement System
Internal Equities
Business Plan

I. Portfolio Role and Purpose

This report reviews the rationale and use of internal passive equity management at California State Teachers' Retirement System (CalSTRS). In addition, consideration is given to future applications of internal management within the domestic equities asset class. The objective of this overall review is to provide the Board with foundational information that should prove useful as it considers increasing its commitment to internal equity management over time. Specifically, the report reviews the development and success of the internal passive domestic equity program to date and provides information useful for considering an expansion to this program.

In early 1998 the Board adopted policies and procedures to establish and operate an internal passive management program within the domestic equity asset class. As mentioned earlier, the primary intent of this program was to determine whether Staff could execute such a program in a cost-effective manner while producing investment performance that was competitive with that of CalSTRS' current external passive domestic equity manager. If Staff could achieve such objectives, then other ancillary benefits (such as streamlined management activities, confidentiality, etc.) might also accrue to the overall CalSTRS' investment program.

On March 31, 1999, the internal passive domestic equity program completed its first twelve months of operations. With over one billion dollars of assets under management, the internal program produced performance results that met or exceeded expectations. As a result, a strong case can be made that internal passive management of CalSTRS' domestic equity assets should continue and that the Board should consider expanding the internal program's role through additional fundings and/or asset transfers from the passive external manager.

II. Description and Definitions

A critical function that the Board performs for the CalSTRS' investment program is to establish a broad-based asset allocation policy for the entire CalSTRS' investment portfolio. The Board typically reviews and makes revisions to this policy every two to four years.

In addition, the Board periodically establishes and refines benchmarks used to monitor the performance of the overall portfolio in light of adopted policy. While the Board has access to a variety of benchmarks for analysis, the most critical benchmark for assessing portfolio performance is the "policy benchmark." This benchmark is a combination of various asset class benchmarks that track the investment performance of financial assets with unique characteristics (stocks, bonds, cash, real estate, etc.).

The Board last adopted an asset allocation policy and policy benchmark in mid-1997. Within this policy, the Board established a target proportion for domestic equities of 38% of total portfolio assets. Another way of stating this target is that 38% of CalSTRS' portfolio should produce returns that are equal to or slightly better than those produced by the broad U.S. domestic equity market.

At a 38% proportion of total assets, domestic equities is by far the largest asset class in the CalSTRS' portfolio.[1] There are two primary reasons for investing such a significant proportion of the portfolio in domestic equities. First, domestic equities have produced (and are expected to produce) one of the highest and most consistent long-term real returns[2] of all the major asset classes. This significant real return potential is a major factor in CalSTRS achieving its long-term funding objectives. Second, the broad U.S. domestic equity market is one of the most liquid markets in the world. This market liquidity allows institutional investors such as CalSTRS to implement investment policy on an incremental basis in a cost-effective manner.

Given the relatively high proportional allocation to domestic equities, selecting the appropriate asset class benchmark becomes especially important. Such a benchmark should represent as broad of a sample of the U.S. equity market as possible while, at the same time, allowing institutional investors such as CalSTRS the ability to create portfolios that track the characteristics of the benchmark. This latter capability is critical because portfolios that match the investment results of the asset class benchmark reflect directly the role of domestic equities within the broader asset allocation policy.

In 1996, the Board and Staff considered a variety of domestic equity benchmarks for the domestic equity asset class. After research, analysis, and comparison the Board adopted the Russell 3000 Index as its domestic equity performance benchmark. This benchmark consists of the largest 3,000 U.S.-domiciled companies, weighted by their market capitalization (a company's shares outstanding multiplied by its market price). Importantly, the Russell 3000 Index meets the above two criteria (see prior paragraph) while also maintaining a growing and significant institutional acceptance as an asset class benchmark.

The Russell 3000 Index can also be broken out into a variety of different modules that reflect the major risk factors that influence domestic equity asset class performance over long time periods. Two major risk factors that have dominated equity performance in recent years are: (i) company size and (ii) whether a stock's performance is driven by a company's earnings growth (a growth stock) or its balance sheet (a value stock) – i.e., a "growth vs. value" factor.

Historically, institutional investors such as CalSTRS have utilized another domestic equity index, the S&P 500, as their asset class benchmark. While the companies in the S&P 500 comprise approximately 80% of the Russell 3000 on a market capitalization basis, practitioners discovered

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[1] Domestic fixed income, at 26% of total assets, is the next largest asset class.

[2] The "real return" is that return in excess of inflation.

that the average company within the S&P 500 was significantly larger than the average company within the broader market. As a result, practitioners and institutional investors began to recognize that the S&P 500 contains a "large company bias" and may not fully reflect the company size characteristics of the broader U.S. equity market. An important outgrowth of this finding is that investors are beginning to treat the S&P 500 as a large-company module within the broader asset class. In other words, from a benchmark construction viewpoint:

Russell 3000	**=**	**S&P 500**	**+**	**the other 2500 stocks**[1]
100%	=	80%	+	20%

Another important factor influencing this construction model is that the investment industry has evolved significantly toward investment products that match the performance of the S&P 500. In fact, equities within the S&P 500 are typically the most liquid of all stocks, making them attractive for developing index matching portfolios (index funds).

Reflecting these trends and the above modular structure, the Board adopted an equivalent domestic equity portfolio structure in 1997 and began implementing this structure in 1998. The two major structural changes mandated by the Board in 1997 were: (i) to maintain a portfolio structure equivalent to that above, but adjusted for actual segment weightings over time; and (ii) place 20% of the assets in "active" mandates and 80% in "passive" mandates. Active mandates are those investment assignments that, in aggregate, the Board expects to <u>outperform</u> the asset class benchmark (the Russell 3000) over an investment cycle. Passive mandates are those assignments that, in aggregate, should <u>match</u> the investment performance of the Russell 3000. CalSTRS' internal passive management program is a segment of the passive component of the domestic equity portfolio.

As of December 31, 1998, the CalSTRS' passive domestic equity portfolio totaled approximately $35 billion. Within the S&P 500 module, Barclays Global Investors (BGI) manages $27.8 billion and $1.2 billion is managed internally by CalSTRS' staff. As mentioned earlier, this structure has been in place since April 1998. The important consideration now before the Board is whether the internal program should be expanded.

Based on the recommendation in the executive summary, raising the account size of the internal program to 50% of the value of the S&P 500 module would make it the largest single account in the overall CalSTRS portfolio (matching the size of externally-managed BGI account). The next several sections of this report review the issues surrounding such an expansion. To begin, the following section reviews the history and development of the internal passive domestic equity program at CalSTRS.

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1 This construction model is not exact because the S&P 500 contains a few securities that trade in the U.S. but represent companies that are domiciled outside of the U.S. (such securities are termed "ADRs"). This issue is definitional in nature and has very minor impact on domestic equity benchmark performance.

III. Historical Overview

Domestic Equity

Prior to 1966, CalSTRS was prohibited from owning equity securities. In 1966, Proposition 6 was passed, which removed the prohibition but placed a statutory limitation on the maximum percentage of equity which could be held in the investment portfolio. Subsequent to this event, the first equity security was purchased in March 1973. By June 1973, CalSTRS had invested approximately 4% of the total investment portfolio (approximately $115 million) into a small number of “blue chip” companies. CalSTRS’ equity exposure remained relatively constant varying between 3% and 5% of the total investment portfolio for the next six years with the total market value of the equity exposure growing to approximately $350 million during that period. In 1979 and 1980, there was a change in the asset allocation with the market value of domestic equity portfolio rapidly increasing to 25% of the total investment portfolio.

In 1983, Proposition 21 was implemented, which eliminated the statutory limitations on the equity component of the investment portfolio. During 1985, the general consultant completed an asset allocation review. The recommendation was an increase in domestic equity securities to 50% of the investment portfolio. Historically, this percentage has been the highest allocation to domestic equity.

Subsequent asset allocation reviews have been approved by the Board about every two years, each with a unique combination of domestic and international equity and fixed income percentages. The desire for increased diversification has gradually reduced the domestic equity allocation level to the current allocation of 38%.

From 1973 to 1985, all of the domestic equity was managed in an active style. In implementing the 1985 Investment Management Plan, an initial allocation to passive management was completed in the summer of 1985. Since that time, there has been an increasing reliance on passive management. In mid-1997, the Board established a target proportion of 80% passive management and 20% active management.

Passive Domestic Equity Management

Prior to June 30, 1983, the California Public Employee’s Retirement System (CalPERS) Staff managed the total CalSTRS’ investment portfolio under an interagency agreement. CalPERS’ investment staff was advised by external managers but executed the trade lists for both the CalPERS’ and CalSTRS’ domestic equity portfolios.

Beginning July 1, 1983, legislation prohibited CalSTRS from using CalPERS' investment personnel. As a result, CalSTRS hired external advisors to assume full responsibility for managing the investment portfolio. In 1985, CalSTRS made its initial allocation to passive domestic equity. From 1985 to 1998, CalSTRS had used only one manager for investment management of the indexed domestic equity portfolio: Barclays Global Investors (BGI) and its predecessors.

In September 1997, the Board committed $1 billion to an internal passively managed S&P 500 portfolio (Portfolio) based upon the recommendation of Staff and PCA. The policies for the Portfolio were approved in January 1998 and investment management of the Portfolio began on April 1, 1998. The performance of the Portfolio has met or exceeded expectations. However, Staff are facing new challenges due to the relatively small size of the Portfolio. A further explanation is detailed in a later section of this report. See section "VI – Key Issues."

Cash Equitization

On October 7, 1998, the Board approved the concept of a cash equitization program for the domestic equity. The equitization program provides a mechanism that enables the domestic equity exposure to remain closer to the adopted strategic asset allocation policy target. The cash equitization program assures that CalSTRS will maintain market exposure and minimize expected tracking error without impacting the domestic equity manager's investment decisions. The policies for the program were approved in January 1999. The program is scheduled to begin in May 1999 by equitizing approximately $150 million of cash balances.

IV. Current Status of the Internal Passively Managed S&P 500 Portfolio

A detailed examination of the CalSTRS' Indexed Portfolio was conducted for the twelve month period of April 1, 1998 through March 31, 1999. During this first year, the market value of the Portfolio increased $245.6 million to $1.2 billion.

S&P 500 Changes and Adjustments

The Portfolio is managed in such a manner as to minimize "tracking error" versus its benchmark, the S&P 500 Index. This emphasis on tracking requires portfolio management to execute transactions when the composition of the S&P 500 index changes (e.g., deletions, additions, and corporate actions).

For the twelve month period ending March 31, 1999, there were thirty-nine constituent changes. The majority of the changes occurred because of mergers involving an S&P 500 company. Some of the replacement companies were the largest stocks in the Russell Special Small Company Index

(RSSC)[1]. Before initiating open market trades, Staff seeks to minimize transactions cost by crossing (transferring securities in-kind) between the S&P 500 Portfolio and Extended Market Portfolio (which replicates the RSSC).

The S&P 500 index is rebalanced quarterly in March, June, September and December. The quarterly rebalancing was the next largest source of turnover after constituent changes.

Ancillary Benefits of Internal Management

The tools and resources use to manage the internal portfolio are also being use for efficient planning and execution of: (i) manager transitions, (ii) manager funding, and (iii) manager termination. In each of these instances, the tools developed to manage the internal Portfolio supports the Staff's planning activities and preparation of implementation plans.

The tools also provide Staff with the ability to enhance external equity manager monitoring. Specifically, Staff uses the tools to evaluate externally managed portfolio return, risk and trading costs, providing a clearer perspective on portfolio attributes. The tools not only provide a perspective on how the portfolios are performing, they also help Staff assess portfolio risk and ensure the external manager is adhering to the investment policy. This improved monitoring increases the Staff's awareness and facilitates a more robust dialogue with external active and passive managers.

V. Performance Measurement

The performance objective of the internal Portfolio is to closely track the return of the S&P 500 Index. Table 1 summarizes the results for the Portfolio, the benchmark S&P 500 Index, and the difference, called "tracking error." For the 12 month period ending March 31, 1999, the Portfolio returned 18.49%, while the index return was 0.06% (6 basis points) higher. The returns for the Portfolio incorporated transaction cost but not internal management costs.

Table 1: S&P 500 Performance
For the Twelve Months Ending March 31, 1999

Internal Indexed Portfolio Return	18.49 %

[1] The Russell Special Small Company Index consists of approximately 2500 securities comprising the remainder of the Russell 3000 Index.

Index Return	18.55 %
Tracking Error	-0.06 %

Portfolio return calculated by State Street Bank Analytics.
The total return for the index was calculated by Wilshire Associates.

The performance results are within policy limits by six basis points. The tracking error is attributable primarily to two factors: (i) cash drag from dividend accruals[1] and (ii) security misweights. Cash drag arises because Standard & Poor's assumes that dividend reinvestment occurs on ex-date for performance calculation. However, the period between the ex-date and actual receipt of the dividend could be two to six weeks after the ex-dividend date. During this period, the Portfolio maintains an accrual that does not earn the market rate of return. The use of S&P futures contracts can alleviate this source of tracking error.

The Portfolio's holdings are maintained extremely close to the index weight. The minor misweights create a small tracking error. In order to track the index closely, the dividends on the constituent stocks are collected and reinvested promptly. Unfortunately, due to the relatively small size of the Portfolio, it is not currently cost-efficient to create a portfolio with holdings equal to the index weight due to the cost structure for trading odd-lots (less than one hundred shares). As a result, cash flows are invested in one hundred shares round-lot partial baskets. A large Portfolio would help address this misweight issue.

VI. Key Issues

The threshold issue for the Portfolio is whether to increase the size under internal management. A larger fund will make management easier by allowing the purchase of larger baskets and more securities with cash flows that will actually help control tracking error. By increasing the size, the performance of the Portfolio will be enhanced in such a manner as to minimize deviation between the performance of the Portfolio and the index.

In addition, the indexed portfolio manager must continuously weigh the opportunity cost from not investing cash. The manager must hold a small amount of cash for pending corporate actions that will require the portfolio to purchase stock. Currently, the cash held in the Portfolio typically does not exceed 0.05% ($500,000 for a $1 billion portfolio). A larger Portfolio may require a smaller proportion of cash, reducing non-intentional tracking error further.

Recently, a study conducted by a major brokerage firm showed the benefits of managing a larger S&P 500 portfolio. Using round-lot baskets, tracking error to the S&P 500 index drops from 2.15%, when investing in $500,000 increments, to 0.10%, when investing in $10 million increments. The larger the reinvested basket, the smaller the tracking error when the reinvested basket is combined with the original portfolio. The results of this study are summarized in Exhibit 2.

1 In a market environment when equity returns exceed returns on short-term cash instruments, the Portfolio would under-perform the benchmark.

As the portfolio grows, other advantages of enhancement also become available. For example, a very popular enhancement is the "better-than-the-close"[1] guarantees that brokers offer on S&P 500 index changes. These incentives are generally only offered to those funds of significant size. Also, a greater asset base would enable CalSTRS to negotiate more favorable commission rates on specific trades.

Due to the nature of the types of explicit costs of managing an indexed portfolio the expenses actually go down as the size of the portfolio goes up. This is mainly due to the fixed costs of the Portfolio, which spread over a larger asset base.

VII. Implementation Objectives

In addition to managing the internal indexed portfolio, staff provides technical support to other activities in the CalSTRS' investment portfolio. Staff's participation in such projects may add value and enhance the performance of the overall investment portfolio. To improve these abilities over the next twelve months, the following items will be implemented or be given further consideration for application in the domestic equities asset class.

1. <u>Initiate the Cash Equitization program</u>. The cash equitization program will provide a mechanism for the total domestic equity exposure to remain closer to the adopted strategic asset allocation policy target. A cash equitization program would allow CalSTRS to maintain market exposure and minimize expected tracking error without impacting the domestic equity managers' investment decisions.

2. <u>Acquire other crossing systems</u>. Trading is an integral part of the investment management process. Staff uses a combination of several cost-effective trading strategies. These strategies include crossing with external private crossing entities (e.g., POSIT and Instinet). CalSTRS will expand the use of crossing networks and develop relationships with other firms (e.g., Lattice and OptiMark). This will allow CalSTRS to take advantage of liquidity in the marketplace, while further reducing market impact.

3. <u>Present a report that describes strategies relating to the use of index options in the domestic equity portfolio</u>. The use of options can create risk and return profiles that are either unobtainable with the underlying stocks or too expensive to duplicate with the underlying stocks. The report will review the rationale and use of options for the CalSTRS' investment portfolio.

VIII. Staffing Issues

[1] Standard & Poor's assumes index changes occurs on effective date at the close of business for performance purposes.

The Internal Equities Staff (IES) fulfills a variety of roles in the investment management of the internal S&P 500 Portfolio and cash equitization program. The IES requires extensive knowledge of portfolio management methods, a wide range of professional and technical skills, an in depth awareness of factors that influence the valuation of domestic equity securities and equity index futures and options, and a thorough understanding of trading techniques. Currently, there are three full-time investment professionals on the IES team. One additional position has been approved to manage the cash equitization program. An increase in the portfolio size under management would necessitate the addition of one Investment Officer and one support person.

Exhibit 1: Standard and Poor's Versus Wilshire Index Return Calculations

The S&P 500 index return calculation by Standard and Poor's may differ from that calculated by Wilshire Associates. Differences can occur between Wilshire's and Standard & Poor's calculation because Standard & Poor's uses New York Stock Exchange (NYSE) closing prices and Wilshire uses composite closing prices. The composite closing prices reflect trading activity of the index constituents on regional exchanges after the NYSE closes. When the equity market is moving strongly in one direction, closing prices for those S&P 500 stocks that continue to trade on the regional exchanges may differ significantly from the NYSE closing prices.

The differences between Standard and Poor's and Wilshire Associates S&P 500 total return calculation is shown in the table below:

S&P 500 Index Total Return

Month	**Standard & Poor's Return**	**Wilshire Associates Return**	**Difference**
Apr-98	1.006	1.036	-0.030
May-98	-1.719	-1.739	0.020
Jun-98	4.062	4.062	0.000
Jul-98	-1.065	-1.063	-0.002
Aug-98	-14.458	-14.436	-0.022
Sep-98	6.406	6.476	-0.070
Oct-98	8.134	8.095	0.039
Nov-98	6.061	6.063	-0.002
Dec-98	5.762	5.819	-0.057
Jan-99	4.182	4.116	0.066
Feb-99	-3.108	-3.106	-0.002
Mar-99	4.001	4.017	-0.016
Cumulative	18.460	18.550	-0.090

Wilshire Associates' pricing method is employed by State Street Bank in the calculation of index funds returns.

Exhibit 2: Case Study

Parameters for Case Study:

- Start with 2 portfolios, $1 billion and $10 billion, both initially perfect replicas S&P 500 index.
- Reinvest dividends to minimize overall tracking to the S&P 500 Index.
- Dividend rate of 1.4% on a $1 billion portfolio implies roughly $500,000 to be invested biweekly or $1 million to invest monthly.
- Dividend rate of 1.4% on a $10 billion portfolio implies roughly $5 million to be invested biweekly or $10 million to invest monthly.
- Baskets created using 'round-lot constraint" consist of perfect slices of the S&P 500 with resulting quantities rounded to the nearest 100 shares.

S&P 500 Baskets

	Names	**Shares**	**$ Value**	**Tracking Error**
$500,000 Round Lot	68	7,700	514,502	2.15%
$1,000,000 Round Lot	121	16,300	1,025,604	1.43%
$5,000,000 Round Lot	375	81,500	4,922,201	0.26%
$10,000,000 Round Lot	472	166,400	10,064,583	0.10%

California State Teachers' Retirement System
Internal Equities
Policies

I. Internal S&P 500 Portfolio

The objective of Indexed Portfolio is to replicate the performance of the S&P 500 index. The S&P 500 Index is composed of 500 large companies. The S&P 500 Index is a market-value weighted index (shares outstanding multiplied by stock price) of 500 stocks. The weighting system allows each company to influence the S&P 500 Index's performance directly proportional to the relative market value.

The Standard and Poor's S&P 500 Index Committee is responsible for all decisions affecting the S&P 500 Index. This committee determines the overall policy and objective of the S&P 500 Index and establishes guidelines and criteria for adding or deleting each company in the S&P 500 Index.

Component stocks are chosen with the aim of achieving a distribution by broad industry grouping that approximates the distribution of these groups in the New York Stock Exchange. Each stock added to the S&P 500 Index is evaluated prior to inclusion based on a number of factors, including financial condition, industry leadership role, and liquidity. Since some industries are characterized by companies of relatively small stock capitalization, the S&P 500 Index does not comprise the 500 largest companies in the United States.

Policies for the management of the internal indexed S&P 500 portfolio (Portfolio) are listed below:

1. The domestic equity assets of CalSTRS are to be invested in a prudent manner for the sole benefit of its participants and beneficiaries, in accordance with applicable portions of California State law.

2. The ~~primary~~ Portfolio's performance objective is to seek ~~a total rate of return equal to~~ to realize a performance of the S&P 500 index, as reported by the master custodian. The ~~total rate of return~~ deviations between the performance of the Portfolio and the ~~designated~~ benchmark (tracking error) should be random. The ~~cumulative~~ annualized tracking error will be limited to +/-0.12% (12 basis points). A larger tracking error will be allowed as ~~where it is~~ the result of a deliberate decision to reduce turnover or to control a specified risk contained in the Portfolio.

3. To achieve the stated performance objective, ~~a broadly diversified portfolio will be managed in a passive index approach with risk characteristics closely resembling the S&P 500 Index.~~ the Portfolio invests in a diversified portfolio of equity securities in the index. The Portfolio will be managed in a passive manner, with risk characteristics closely resembling the S&P 500 Index. When the S&P 500 index is expensive to fully replicate due to temporary circumstances such as transaction costs or market liquidity, an optimized approach with fewer stocks may be used with the approval of the Chief Investment Officer.

4. Security transactions ~~will be undertaken~~ are performed when necessary to approximate the characteristics of the S&P 500 Index ~~or~~ and fulfill the performance objective.

5. The value of the internal indexed portfolio will be 50% (minimum allocation of 45% and maximum allocation of 55%) of the total S&P 500 passive mandate.

6. The total holdings of securities in the ~~internally managed domestic equity~~ Portfolio issued by any one U.S. corporation shall be limited to five (5%) percent of the total issued and outstanding shares.

7. The investment securities prohibited by the most recent Investment Resolution~~, adopted by the Board in 1984 (as amended from time to time),~~ will not be purchased or held in the internally managed domestic equity indexed Portfolio. A customized index may be used when companies contained in the S&P 500 Index are prohibited from being held in the ~~internally managed~~ Portfolio.

8. ~~Exchanged traded~~ S&P 500 Index futures ~~(futures)~~ contracts ~~S&P 500 Index options (options)~~ and Standard and Poor's Depository Trust Receipts (SPDRs) may be used for equitizing cash positions. ~~and for facilitating changes in asset allocation. Futures, options, and SPDRs may be purchased for sold only with prior approval of the Chief Investment Officer.~~

9. All transactions will be carefully evaluated to determine the expected benefits to the ~~internally managed domestic equity~~ Portfolio. ~~An~~ E~~e~~fficient trading strategies~~y~~ will be ~~implemented~~ utilized in order to minimize market impact and transaction costs. In all transactions, ~~the equity trader~~ investment personnel shall use best efforts to obtain the most favorable execution available at the time of the trade.

10. Investment personnel will comply with the rules of the Securities Exchange Commission (SEC), exchanges, and other regulatory agencies.

11. Brokers will be selected ~~primarily~~ for their quality of execution, ~~capabilities and ability to position securities. Prudent management of trade execution insures that a diversified group of brokers will be utilized. Care must be taken not to complete an inordinate dollar value of trades through any one broker.~~ quality and timeliness of the operation area, and creditworthiness. A diversified group of brokers will be used to insure overall quality of trade executions.

12. The Chief Investment Officer has authority to manage the Portfolio internally and may use other investment personnel for the management of the Portfolio.

13. Net open trade (purchase minus sale) transaction dollar limits will be capped at $50 million for agency trades. Principal trades will be specifically exempted from the $50 million open trade limit.

14. The Chief Investment Officer ~~is delegated~~ has the authority to trade appropriate securities for the Portfolio and ~~delegate this authority to~~ may use other investment personnel to conduct trading. The graduated limitations of daily trading authority for Portfolio ~~internal equity~~ transactions are designated below:

Chief Investment Officer	$ 1 billion
Director of Internal Equity	$100 million
Investment Officer III	$ 50 million
Investment Officer II	$ 25 million
Investment Officer I	$ 10 million

~~As stated in policy number seven above, all trades involving futures, options, and SPDRs must have the approval of the Chief Investment Officer.~~

15. Authorization letters which indicate who may ~~open accounts~~ transact business for the ~~internal equity~~ Portfolio, including a copy of the most recent Investment Resolution, shall initially be sent to the broker at the time the account is established~~ and then periodically to all broker/dealers with whom STRS conduct business~~. Whenever there is a change in authorized personnel, ~~STRS will notify these brokerage firms verbally and with written notice within twenty four (24) hours of the personnel change. A formal written notice will be sent to the brokerage firm within thirty (30) days.~~ CalSTRS will immediately notify all brokers in writing within twenty four (24) hours.

16. The Chief Investment Officer shall monitor the investment policies and report to the CalSTRS' Board quarterly or as otherwise requested.

II. Cash Equitization Program

Polices for the management of the Cash Equitization Program (Program) are listed below.

1. The program's objective is to substitute a S&P 500 Index return for a cash return within the domestic equity Portfolio.

2. The program will pursue its investment objective by investing in S&P 500 index futures contracts, Standard and Poor's Depository Trust Receipts (SPDRs), and/or short-term fixed income securities for the following purposes:
   - Facilitate investment of active domestic equity manager's cash balances;
   - Eliminate cash drag resulting from cash flows in the S&P 500 Index Portfolios; and/or
   - Equitize cash resulting from domestic equity manager transitions.

3. The program will not use futures for speculative purposes or to increase the equity exposure greater than the amount of the cash balances identified in policy number two above.

4. The value of the S&P 500 futures contracts and/or SPDRs held in the program is limited to one percent of the market value of total assets.

5. The Program will comply with the rules of the Commodity Futures Trading Commission (CFTC) and other regulatory agencies.

6. Brokers will be selected for their quality of execution, overall quality of their derivative effort, quality and timeliness of their operation area, and creditworthiness of the clearing broker. A diversified group of brokers will be used to ensure overall quality of trade executions.

7. The Chief Investment Officer is delegated authority to manage the program internally and may use other investment personnel to implement the program.

8. The Chief Investment Officer is delegated authority to trade appropriate securities for the program and may use other investment personnel to conduct trading. The graduated limitations of daily trading authority for S&P 500 Index futures contracts are designated below.

Chief Investment Officer	$500 million
Director of Internal Equity	$ 50 million
Director of Fixed Income	$ 50 million
Investment Officer III	$ 25 million
Investment Officer II	$ 10 million
Investment Officer I	$ 10 million

9. Authorization letters which indicate who may transact business for the program, including a copy of the most recent Investment Resolution, shall be initially sent to the broker at the time the account is established. Whenever there is a change in authorized personnel, CalSTRS will immediately notify all brokers in writing within twenty four (24) hours.

10. The Chief Investment Officer shall monitor the investment policies and report to the CalSTRS' Board quarterly or as otherwise requested.

Resolution of the
Teachers' Retirement Board
Investment Committee

Subject: Internal Equities Business Plan

Resolution No. _____

WHEREAS, the Investment Committee of the Teachers' Retirement Board is responsible for recommending to the Board, investment policy and overall investment strategy; and

WHEREAS, the Investment Committee has received and reviewed the Internal S&P 500 Indexed Portfolio Policies and has heard oral presentations from Staff; and

WHEREAS, the Staff has recommended the adoption of the Internal S&P 500 Indexed Portfolio Policies; Therefore be it

RESOLVED, that the Investment Committee of the Teachers' Retirement Board adopts the Internal S&P 500 Indexed Portfolio Policies.

Adopted by:
Investment Committee
on

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James D. Mosman
Chief Executive Officer